

In the claims:

1. (Currently Amended) A direct-and-non-destructive method for measuring recess depth in a semiconductor wafer through use of a solvent, comprising:
 - a) placing a recessed wafer into a track;
 - b) pouring a solvent into the wafer;
 - c) commencement of spinning the track-wafer-solvent to recess said solvent into the wafer trench solvent;
 - d) subjecting the track-wafer-solvent from step c) to a subsequent spinning step to spin-off any remaining solvent on the surface of said wafer to leave the wafer trench filled with solvent;
 - e) weighing the solvent-filled-trench wafer;
 - f) subjecting the solvent-filled-trench wafer to heating to remove said solvent; and
 - g) weighing the solvent-free wafer to determine the difference in weight, and using the density of the solvent together with the difference in weight to determine the recess depth.
2. (Original) The method of claim 1 wherein said solvent is an organic solvent.
3. (Original) The method of claim 2 wherein said solvent is characterized by a density of about 1.4g/cm³.
4. (Currently Amended) The method of claim 3 wherein said semiconductor device wafer has a device dimension of is 0.13 μm or less.

5. (Currently Amended) The method of claim 1 wherein said semiconductor device wafer is a 110nm DRAM product characterized by includes 308 chips per 8 inches of a wafer, and a half billion trenches per chip, each chip being a 110nm DRAM product.

6. (Original) The method of claim 5 wherein each trench has a width of 125nm, a length of 220nm and a depth of 1.3 μm .

7. (Original) The method of claim 6 wherein the total volume of trench filled-up with said solvent is about 4.3mm³.

8. (Original) The method of claim 7 wherein said weight difference is about 6mg.

9. (Original) The method of claim 1 wherein said recess is a polysilicon recess.

10. (Original) The method of claim 9 wherein said polysilicon recess results from an ASG or a LOCOS process.

11. (New) A method of measuring recess depth in a semiconductor wafer, the method comprising:

providing a wafer including a plurality of recesses, the wafer having a device dimension of 0.13 μm or less;

filling each of the recesses with a liquid;

determining a weight of the wafer with the liquid in each of the recesses;

determining a weight of the wafer with no liquid in any of the recesses; and

determining in a recess depth for each of the recesses based upon a difference in the weight with the liquid and the weight with no liquid.

12. (New) The method of claim 11 wherein the wafer is placed in a track prior to filling each of the recesses with a liquid.

13. (New) The method of claim 11 wherein filling each of the recesses with a liquid comprises pouring a liquid onto the wafer and subsequently spinning the wafer.

14. (New) The method of claim 13 wherein spinning the wafer comprises performing an initial spinning step to cause the liquid to enter each of the recesses followed by a subsequent spinning step to remove remaining solvent from a surface of the wafer.

15. (New) The method of claim 11 and further comprising heating the wafer to remove liquid from the recesses.

16. (New) The method of claim 15 wherein the heating step is performed before determining a weight of the wafer with no liquid in any of the recesses.

17. (New) The method of claim 11 wherein the liquid comprises an organic solvent.

18. (New) The method of claim 11 wherein the liquid is characterized by a density of about 1.4g/cm³.

19. (New) The method of claim 11 wherein said semiconductor wafer has a device dimension of 0.13 μm or less.

20. (New) The method of claim 11 wherein said semiconductor wafer comprises a DRAM product.